## REMARKS

In paragraph 4 of the Office Action, claims 20-22, 41 and 42 were rejected under 35 USC §102(e) over Tokas, U.S. patent publication 2002/0053379 (ser. no. 09/209,706, the first filed case). Applicants submit herewith a declaration under 37 CFR 1.130 and a terminal disclaimer of ser. no. 09/209,706, removing this reference as prior art.
Removal of the rejection under 35 USC 103(e) is respectfully requested.

In paragraph 7 of the Office Action, claims 1-5, 7-15, 17, 18, and 20-43 were rejected under 35 USC 103(a) over Tokas (2002/0053379) in view of Grubbs et al, Suzuki et al, and Müelbach et al. Removal of Tokas (2002/0053379) by way of the declaration and disclaimer above overcomes this rejection, and removal is respectfully requested.

In paragraph 8, claims 1-5, 7-16, 17, 18 and 20-43 were rejected under 35 USC 103(a) as unpatentable over Müelbach et al, taken in view of Lesser (US 2,978,354), Cole (US 3,485,655), or Krieble (US 2,901,099) and EP 424,233. The rejection is traversed as follows.

Claims 1 and 20 entail methods for bonding a first non-fibrous substrate to a second non-fibrous substrate without radiation, thermal or photochemical curing energy, whereby a metathesis catalyst is applied to the first substrate; and a metathesizable mixture containing 0.5 – 20 mol% of a metathesizable crosslinker dissolved in a principal metathesizable material is applied to the said second substrate; and the substrates are joined. Support for the amendment of claims 1 and 20 is found on page 37, line 18-19.

Evidence of a surprising bonding effect is provided in examples 34 – 38 wherein the present method of applying a mixture of metathesizable monomer with from 0.5 – 20 mol % of a crosslinkable metathesizable monomer show surprising improvements in adhesion. These examples were provided without radiation, thermal or photochemical curing energy. A variety of substrates were tested, including rubber tread (elastomer as

in claim 2) to tire carcass, EPDM to EPDM (thermoplastic elastomer as in claim 3), EPDM to metal (as in claim 4), and polypropylene (as in claim 31). The selection of these examples is to show improvements for substrates known to be difficult to bond. The results show that 0.5 mol % - 20 mol% crosslinking monomer result in improvements in adhesion. Tables 21 and 22 show not only that high adhesion at room temperature is obtained, but that improvements in adhesion at elevated temperature are obtained.

Müelbach et al is applied in the rejection, however Applicants note that Müelbach et al teaches a class of one-component catalysts that require the application of radiation to induce degradation of the catalyst followed by the application of thermal curing energy. These catalysts are incapable of initiating ring-opening metathesis at room temperature. (Col. 16, line 10). These catalysts contain at least one photo-labile ligand bonded to a ruthenium or osmium atom. (Col. 16, line 26-28). The photolabile ligands are described following this passage at lines 35-65.

Müelbach et al, therefore do not teach a method for bonding two substrates using a metathesis catalyst absent the use of radiation and thermal curing energy, and there is no suggestion or motivation to do what Applicants have done by applying a metathesis catalyst to achieve bonding of two substrates without application of such energy. In particular the reference does not teach application of a different catalyst to one substrate, and application of a mixture of metathesis monomer mixed with 0.5 – 20 mol% of a crosslinking metathesis monomer to the second substrate and joining the substrates to form strong adhesive bonds without the application of such curing energy.

Applicants note the general proposition by the Office in concluding unpatentability based on the expectation in the prior art that merely a polymerization will occur. In the case of thermosetting resins using catalysts the catalyst applied to one substrate in the case of Lesser involved application of peroxides. This type of catalyst caused a reaction with the substrate, with formation of residual activated species, and when unsaturated polyester was applied, these activated species catalyzed polymerization of a coating. In the case of

Kreible, the adhesive used was a peroxide initiated acrylic adhesive used to bond fasteners. In the case of Cole, peroxide catalyst was applied to a wet-layup, which was not new as of the 1966 filing date, according to Col. 1, line 45. The secondary references Lesser, Cole, and Krieble are not directed to metathesizable catalysts which did not exist at the time of these references, nor any strained monomer materials that undergo a metathesis reaction. Absent from these references is any reasonable expectation of the unexpected adhesion results of forming adhesive bonds, in room-temperature adhesive strength, and adhesive strength at elevated temperatures, using later invented metathesis catalysts.

Applicants submit that the general assertion that a polymerization is expected, in applying prior art ignores the subject invention as a whole and the evidence in support for patentability. The invention as a whole applies metathesis catalysts, not a peroxide catalyst, and achieves surprising bonding effects by specific steps and under conditions not taught in the art.

EP '833 does not suggest the problem to be solved in bonding two non-fibrous substrates together without application of one form of energy. EP' 833 is directed to forming a polymer matrix of imbedded fibers in mold to make a fiber-reinforced composite. In this method, monomer is injected into a mold and fills the void space around catalyst-treated fibers. A rapid reaction follows. This system is conducted in a closed reactor, and EP '833 necessarily utilizes the exothermic reaction heat. Note Example 1, on page 7. The exotherm peaked after 45 seconds at 143 °C. After cooling the fiber reinforced composite was removed from the mold.

Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed and, (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. In re Deminski, 796 F.2d 436, 442 (Fed. Cir. 1986); see also In re Wood, 599 F.2d 1032, 1036 (CCPA 1979) (Cited in *In Re Alberto Lee Bigio*, 03-1358,CAFC Aug. 24, 3004). Applicants

submit that RIM molding of EP '833, as well as peroxide curing of unsaturated resins of Cole, Kreible and Lesser are not in Applicants' field of metathesis adhesive bonding of two non-fibrous substrates, and these references also are not pertinent to the problem of bonding two substrates in the absence of exotherm heat, or in the case of Muelbach, the use of radiation and heat, and therefore provide no teaching, suggestion or motivation to do what Applicants have done, in view of unexpected results.

There is no expectation that without the application of radiation, thermal or photochemical curing energy that bonding of two substrates may take place from the '833 disclosure. Applicants submit that the invention is directed to the unexpected effect of improved adhesion, and not the expectation that a metathesis reaction would occur upon contacting a metathesis catalyst and monomer according to Applicants' teachings.

The data Table provided on page 75 of the application shows surprising improvement in bonding a difficult-to-bond substrate, polypropylene. The control example ENB, was absent a crosslinking monomer and the bond strength of polypropylene was 348 p.s.i. . as compared to examples using 2 %, 5%, and 10% of a crosslinking monomer in mixture with ENB wherein the adhesive strength obtained rose to 406, 405, and 407 p.s.i., respectively.

For these reasons, Applicants respectfully submit that the rejection of claims over Müelbach et al, taken in view of Lesser (US 2,978,354), Cole (US 3,485,655), or Krieble (US 2,901,099) and EP 424,233 is in error and removal is respectfully requested.

Respectfully submitted,

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**CERTIFICATE OF MAILING (37 CFR 1.8(a)**
I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited on the date indicated below with the United States Postal Service in an envelope addressed to the Assistant Commissioner of Patents, PO Box 1450 Alexandria, VA 22313-1450, with sufficient postage as first class mail.

M. B. Dearth (signature)

9-27-04 (date)